

*Dr. Leonard Waldo,
Newton E. Stout.*

*Erwin S. Sperry,
Supt.*

Waldo & Stout,

Founders in

Aluminum, Silicon and Manganese Bronze.

Castings of all weights and descriptions in High Grade Alloys,

including Aluminum, Silicon, Manganese, Phosphor Brasses & Bronzes & in Pure Aluminum.

*Rolling Mill Wire Bars & Plates to meet Special Electrical, Chemical, Mechanical,
or Decorative Requirements in the Finished Wire, Rod, or Sheet Metal.*

Bridgeport, Conn. Sept. 22nd, 1893.

Charles E. Barber, Esq.,
United States Mint,
Philadelphia, Penn.

Dear Sir:

Referring to our interview of yesterday, I wish to send you a memorandum of some of the physical peculiarities of well made aluminum bronze, such as we propose to furnish you for the minting of the World's Fair Medals, in case the United States authorities should so desire.

Copper, as you well know, rapidly acquires an extremely hard surface under the drop forging process, and this necessitates in the manufacture of such large medals as you contemplate, a very long time in the annealing of the metal, since it must be annealed many times in the course of it's manufacture.

Aluminum bronze, for some as yet unexplained reason, does not acquire this hard temper with anything like the same rapidity with which copper acquires it. The result is that looking at the matter from the purely mechanical stand-point, aluminum bronze possesses a great advantage over any pure copper, or any known bronze or brass of

C. E. B. - 2.

copper, in that the metal can be finished much more rapidly, owing to the diminution of time required for annealing.

It has also been found that the artistic details are received by aluminum bronze with much more fidelity to the time, and with fewer blows struck than is the case with pure copper. These remarks apply only to aluminum bronze, in which extreme care is taken to have the material pure. It does not apply to aluminum bronze in which there is any considerable amount of silicon or iron.

We shall proceed with the preparation of a sample sheet about $3/8$ of an inch thick, and so that you will be able to get out discs 3 in. in diameter or over. As to the color to be given to the metal finally, your own taste will have to decide whether it is desirable to retain the true gold color of the aluminum bronze, or whether you wish to oxidize it, after the manner of copper bronzes, to produce more subdued effects. That is a matter which we can consider after the mechanical properties of the bronze have received your approval.

We think nothing needs to be said as to the extreme appropriateness of aluminum bronze for the award medals of the Columbian World's Fair. The production of aluminum bronze is certainly the greatest achievement of the age, and the United States has been the birth-place of the commercial processes for its manufacture. It is conceded to be the strongest, most permanent and most beautiful of all the bronzes, and the World's Fair exhibit of aluminum and its bronzes is by far the most perfect so far made. In color the bronze is un-

C. E. B. - 3.

distinguishable from gold, and in the specimens which we have prepared for you we shall use such a percentage of aluminum as will produce a deep colored gold effect.

Yours very truly,

Samuel Walden

257 1/2
Leonard Waldo,
Bridgeport Conn
Sept. 22, 93

Relative to Aluminum
Bronges for Medals.

Received Sept. 23. 1893

[Abstract:] Relative to Aluminum Bronze for medals.

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Leonard Waldo